

[54] Title of the Utility Model : Surface Light Source Device  
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[51] Int.Cl. : G02B 5/14, F21V 5/00, 13/04

[Claims]

10 1. A surface light source device comprising:  
a transparent plate having an insertion hole;  
a light source buried in the insertion hole; and  
a light scattering treatment surface formed on the plate, the light  
scattering treatment surface emitting light, that is generated by the light  
15 source and propagates through the transparent plate, outside from the  
plate, and the light scattering treatment surface and an area in the vicinity  
of the surface acting as a light emitting surface,  
characterized in that,  
a side surface of the transparent plate is formed to have a shape,  
20 wherein,

at a side surface area of the transparent plate, where an angle  
formed between a normal and a line connecting the light source and the  
side surface is larger than a critical angle of a total reflection of a  
material of the plate, when the line does not cross the light scattering  
25 treatment surface.

2. The surface light source device of claim 1, wherein at least a  
portion of a projected figure along a normal direction of the transparent  
plate is expressed by an exponential curve represented by an equation  
30  $r = \exp(\theta \cdot \tan \theta_1)$  or a curve analogous to the exponential curve,  
where,

$\theta_1$  is an angle equal to or larger than the critical angle of a total  
reflection of the material, while smaller than a right angle,

$r$  is a distance from the light source as an origin, and  
 $\theta$  is a phase angle against a normalized line.

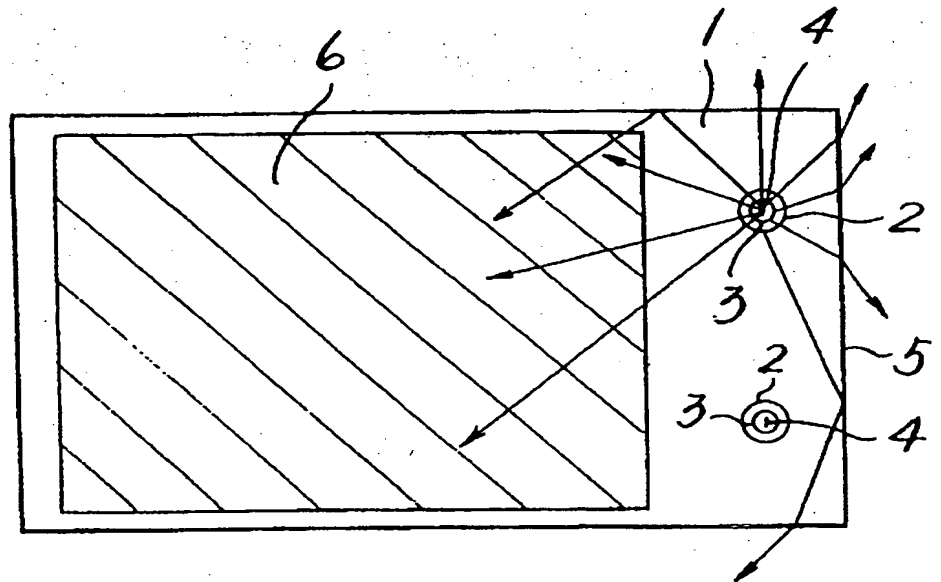
[Brief Description of the Drawings]

- 5 Fig. 1 is a plan view of the prior art surface light source device.  
Fig. 2 is a side view of Fig. 1.  
Figs. 3 and 4 show plan views of other prior art surface light source device.  
Fig. 5 is a side view of Fig. 4.  
10 Fig. 6 is a plan view of an example of the present utility model.  
Fig. 7 is a side view of Fig. 6.

[Reference Numerals]

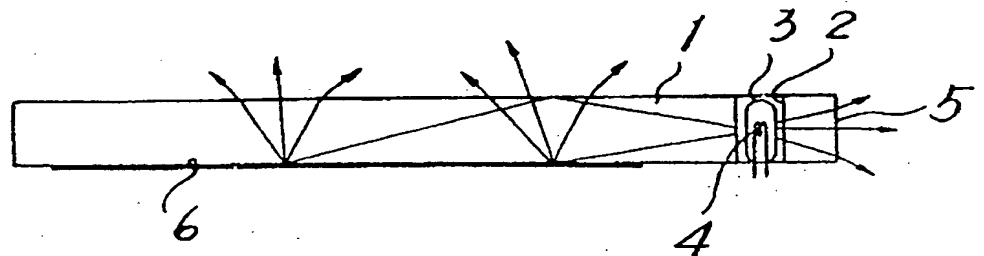
1. transparent plate  
15 2. insertion hole  
3. incandescent lamp  
4. filament  
5. side surface  
5a. curved portion  
20 6. light scattering treatment surface

図 1



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図 2



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图 3 牙

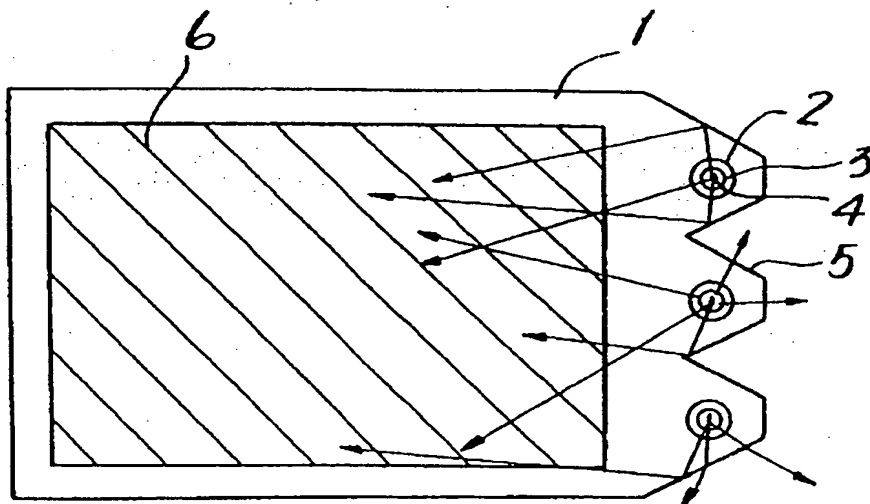


图 4 牙

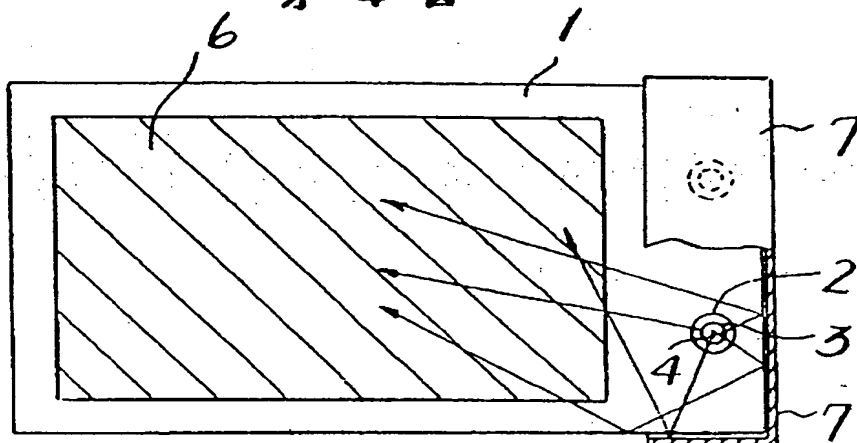
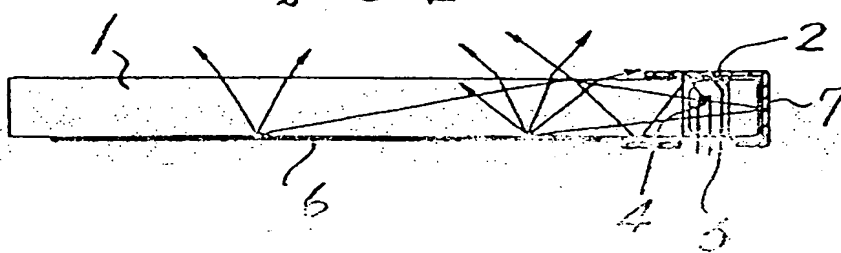


图 5 牙



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図 6

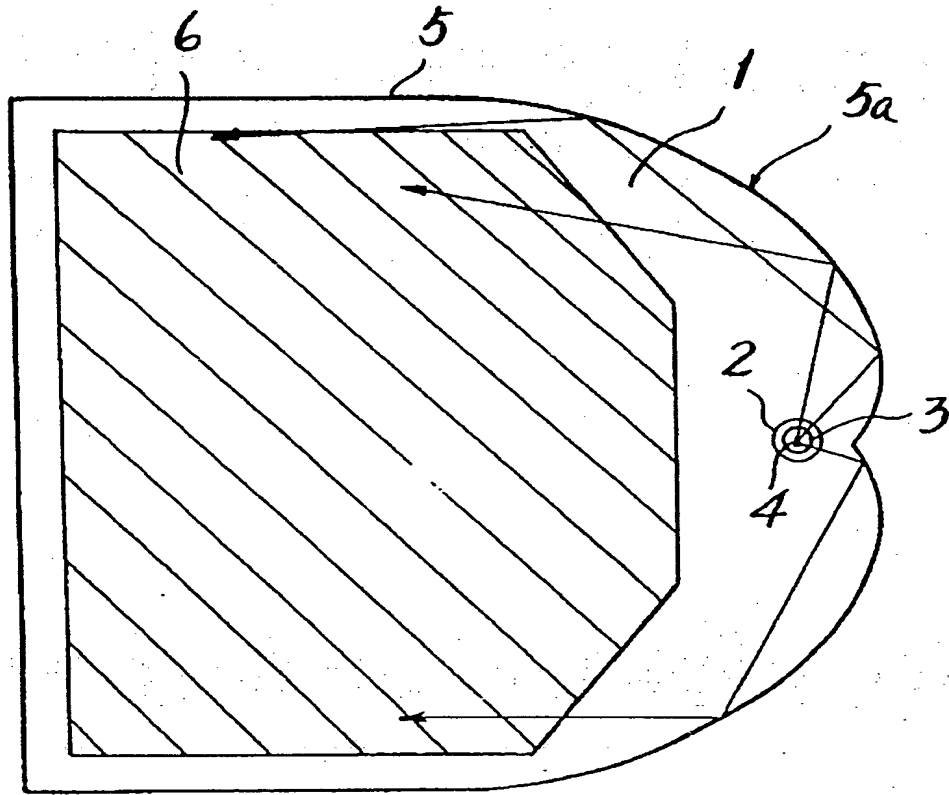
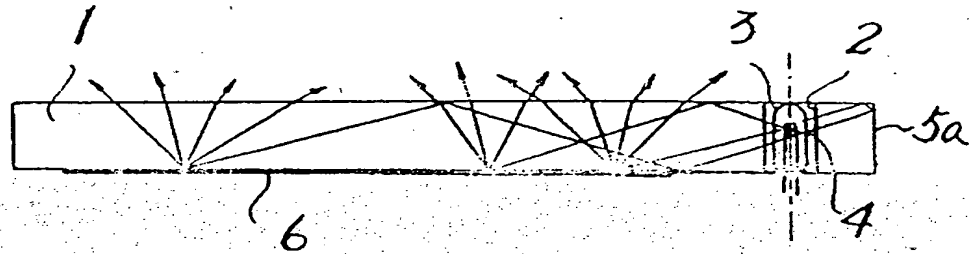


図 7



32

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